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EXAMINER	
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ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/811,752	NEGLEY, GERALD H.	
	Examiner	Art Unit	
	Matthew C. Landau	2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 January 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,7-18 and 45-49* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *12* is/are allowed.

6)☒ Claim(s) *1-5,7-11,13-18,45-47 and 49* is/are rejected.

7)☒ Claim(s) *48* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3-5, 8, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Touchy (US Pat. 3,925,121) in view of Ogihara et al. (US Pat. 5,700,714, hereinafter Ogihara).

Regarding claims 1 and 5, Touchy discloses a p-type gallium nitride-based device comprising: a device structure that includes at least one p-type Group III nitride layer (GaN) (col. 2, lines 10-15 and 30-35) that includes some gallium; a first silicon dioxide layer on said p-layer (col. 2, lines 50-52); and a layer of a Group II metal source composition (containing Mg or Zn) on said first SiO_2 layer (col. 3, lines 1-4 and 31-33). Note that Touchy disclose the dopant material (diffusion source) may be deposited by a spin-on process (col. 3, lines 31-33), meaning the diffusion source (Mg or Zn composition) is in the form of a solid layer. The difference between Touchy and the claimed invention is a second silicon dioxide layer on said Group II metal source composition layer. Figure 5 of Ogihara discloses a SiO_2 cap layer 22 (col. 4, lines 3-5) over a diffusion source layer 20. In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to modify the invention of Touchy by including a second SiO_2 layer over the diffusion source layer for the purpose of preventing escape of the diffusion impurity into the ambient space (col. 3, lines 37-41 of Ogihara).

Regarding claim 3, Touchy discloses the Group III elements (in this case Ga) and the group II metal elements diffuse through the protective layer (first SiO_2 layer) (col. 5, lines 16-29). Therefore, the first SiO_2 layer must be thick enough to create vacancies to a depth in said p-type layer that encourage atoms of said Group II metal to diffuse thereinto while still permitting diffusion from said Group II metal source composition.

Regarding claim 4, Touchy discloses the first SiO_2 layer is in the range of 500-1500 angstroms. Touchy does not specifically disclose the first SiO_2 layer is about 1000 angstroms thick, the Group II metal source composition layer is about 1000 angstroms thick, and the second SiO_2 layer is about 2500 angstroms thick. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify Touchy by selecting the claimed thickness values, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 8, it is inherent that the metal source composition layer of Touchy comprises some type of metal-containing compound.

Regarding claim 10, Touchy discloses the Group II metal source composition layer is GaN, which reads on the claim when x=1 and y=0 (col. 2, lines 30-35).

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Touchy in view of Ogihara as applied to claim 1 above, and further in view of Edmond et al. (US Pat. 5,523,589, hereinafter Edmond).

Regarding claim 2, Touchy discloses the p-type semiconductor layer is used in an electro-luminescent semiconductor device (col. 1, lines 47-50). A further difference between Edmond and the claimed invention is the device comprises a conductive silicon carbide substrate; a conductive buffer layer on said silicon carbide substrate; and an n-type Group III nitride layer on said buffer layer, wherein said p-type Group III nitride layer is adjacent said n-type Group III nitride layer to form a p-n junction. Figure 1 of Edmond discloses a light-emitting device comprising a SiC substrate 21, a conductive buffer layer 23 on said substrate; and an n-type Group III nitride layer 27/25 (col. 6, lines 33-38) on said buffer, wherein a p-type Group III nitride layer 26 is adjacent said n-type Group III nitride layer to form a p-n junction (col. 6, lines 33-38). In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to modify the invention of Touchy by using the structure of Edmond for the purpose of fabricating a LED that can emit blue light and can be built in the vertical geometry (col. 3, lines 52-57 of Edmond).

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Touchy in view of Ogihara, as applied to claim 1 above, and further in view of Iguchi et al. (US Pat. 6,214,708, hereinafter Iguchi).

Regarding claim 9, a further difference between Touchy and the claimed invention is the compound is selected from the group consisting of magnesium nitride and zinc phosphide. Iguchi discloses doping an III-V semiconductor with Zn by using zinc phosphide (col. 9, lines 48-52). In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to further modify the invention of Touchy by using zinc phosphide as the

diffusion source material for the purpose of selecting a well known diffusion source zinc compound.

Claims 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Touchy in view of Ogihara, as applied to claim 1 above, and further in view of Nobori et al. (US Pat. 6,291,328, hereinafter Nobori).

Regarding claim 11 and 13, a further difference between Touchy and the claimed invention is a plurality of silicon dioxide portions on said p-type Group III nitride layer, with a respective portion of said source composition on each said silicon dioxide portion. Figures 1 and 2 of Nobori disclose an array of LED's (shown as hatched portions in Figure 1), wherein each LED has a diffusion area 15 and a diffusion source layer 12 over the diffused area. In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to further modify the invention of Touchy by having a plurality of separate diffusion areas, wherein each area is covered by a separate diffusion source layer. The ordinary artisan would have been motivated to modify Touchy in the manner described above for the purpose of fabricating a plurality of LED's on the same substrate. Regarding 13, it would also be obvious to have the second silicon dioxide layer (diffusion cap layer) covering said source composition portions and portions of the p-type Group III nitride layer as taught by Nobori (element 14 in Figure 2), for the purpose of simplifying the production process.

Claims 1, 2, 14, and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Edmond in view of Touchy and Ogihara.

Regarding claims 1, 2, 14, 45, and 46, Figure 1 of Edmond discloses a light-emitting device comprising a conductive SiC substrate 21, a conductive buffer layer 23 on said substrate for providing a crystal transition between said substrate and said GaN portions of said device; and an n-type Group III nitride layer 27/25 (GaN layer) (col. 6, lines 33-38) on said buffer, a p-type GaN layer 26 (GaN when x=0)(col. 6, lines 6-9) is adjacent said n-type Group III nitride layer to form a p-n junction (col. 6, lines 33-38). Note that the n-type group III nitride layer 27/25 can be considered a GaN layer because it contains GaN (see col. 6, lines 6-9, which discloses layer 27 is GaN when x=0). Edmond does not specifically disclose the p-type dopant is magnesium. However, it would have been obvious to use Mg as the p-type dopant in the p-layer 27 for the purpose of selecting a well known p-type dopant material. The selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

A further difference between Edmond and the claimed invention is a first silicon dioxide layer on said p-type layer; a magnesium layer on said first SiO_2 layer for supplying p-type dopant to said p-type layer. Touchy discloses a method of p-doping a GaN layer wherein an intermediate product comprises at least one p-type Group III nitride layer (GaN) (col. 2, lines 10-15 and 30-35) that includes some gallium; a first silicon dioxide layer on said p-layer (col. 2, lines 50-52); and a layer of a Group II metal source composition (containing Zn or Mg) on said first SiO_2 layer

(col. 3, lines 1-4 and 31-33). Note that Touchy disclose the dopant material (diffusion source) may be deposited by a spin-on process (col. 3, lines 31-33), meaning the diffusion source (Zn or Mg composition) is in the form of a layer. In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to modify the invention of Omi by doping the p-GaN layer using the method of Touchy, and therefore the intermediate structure of Touchy (comprising an SiO_2 layer over the p-GaN layer, and a diffusion source layer over the SiO_2 layer). Touchy also discloses the Group III elements (in this case Ga) and the group II metal elements diffuse through the protective layer (first SiO_2 layer) (col. 5, lines 16-29). Therefore, the first SiO_2 layer must be thick enough to create vacancies to a depth in said p-type layer that encourage atoms of said Group II metal to diffuse thereinto while still permitting diffusion from said Group II metal source composition. The limitation "when said device is heated to temperatures between about 750 and 950 degrees" is merely a product-by-process limitation that does not structurally distinguish the claimed invention over the prior art. The ordinary artisan would have been motivated to modify Edmond in the manner described above for the purpose of selecting inexpensive and well-known process for implanting p-dopants (Mg) into the p-layer of Edmond. A further difference between Edmond and the claimed invention is a second silicon dioxide layer on said Group II metal source composition layer. Figure 5 of Ogihara discloses a SiO_2 cap layer 22 (col. 4, lines 3-5) over a diffusion source layer 20. In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to further modify the invention of Edmond and Touchy by including a second SiO_2 layer over the diffusion source layer for the purpose of preventing escape of the diffusion impurity into the ambient space (col. 3, lines 37-41 of Ogihara).

Regarding claim 16, Figure 1 of Edmonds discloses the buffer layer 23 is a homogeneous layer of GaN (col. 5, lines 19-21).

Regarding claim 17, Figure 1 of Edmonds discloses the n-type layer 27/25 comprises GaN (in layer 27) (col. 6, lines 6-9), which reads on the claimed composition of $Al_xIn_yGa_{1-x-y}N$ (when x=1 and y=0).

Regarding claim 18, Figure 1 of Edmonds discloses the p-type layer 26 comprises GaN (col. 6, lines 6-9), which reads on the claimed composition of $Al_xIn_yGa_{1-x-y}N$ (when x=1 and y=0).

Claims 7 and 15 rejected under 35 U.S.C. 103(a) as being unpatentable over Edmond in view of Touchy and Ogihara as applied to claims 1 and 14 above, and further in view of Omi et al. (US Pat. 6,549,552, hereinafter Omi).

Regarding claims 7 and 15, Edmond does not specifically disclose the SiC substrate 21 is n-type. Figure 1 of Omi discloses a light-emitting device with an n-type SiC substrate 1 (col. 4, lines 25-27). In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to modify the invention of Edmond by using an n-type SiC substrate for the purpose of increasing the conductivity of the substrate. Further regarding claim 7, Edmond does not specifically disclose the substrate has a carrier concentration of between about 1×10^{16} cm^{-3} and about 1×10^{19} cm^{-3}. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the invention of Edmond by using a carrier concentration within the claimed range, since it has been held that

discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claims 1, 2, 14, 16-18, 45, and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Edmond et al. (US Pat. 6,201,262, hereinafter Edmond'262) in view of Touchy and Ogihara.

Regarding claims 1, 2, 14, 17, 18, 45, and 46, Figure 2 of Edmond'262 discloses a light-emitting device comprising a conductive SiC substrate 31, a conductive buffer layer 34 on said substrate for providing a crystal transition between said substrate and said GaN portions of said device; and an n-type GaN layer (part of layer 33) on said buffer, a p-type GaN layer (part of layer 33) is adjacent said n-type Group III nitride layer to form a p-n junction (col. 4, lines 6-8 and col. 5, lines 55-57). Edmond'262 discloses the active layer is gallium nitride (col. 5, lines 61-63) and that the active layer 33 is a p-n homojunction (col. 5, lines 55-57). Therefore, Edmond'262 discloses the active layer consists of an n-type GaN layer adjacent a p-type GaN layer.

Edmond'262 does not specifically disclose the p-type dopant is magnesium. However, it would have been obvious to use Mg as the p-type dopant in the p-layer 27 for the purpose of selecting a well known p-type dopant material. The selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

A further difference between Edmond'262 and the claimed invention is a first silicon dioxide layer on said p-type layer; a magnesium layer on said first SiO_2 layer for supplying p-type dopant to said p-type layer. Touchy discloses a method of p-doping a GaN layer wherein an intermediate product comprises at least one p-type Group III nitride layer (GaN) (col. 2, lines 10-15 and 30-35) that includes some gallium; a first silicon dioxide layer on said p-layer (col. 2, lines 50-52); and a layer of a Group II metal source composition (containing Zn or Mg) on said first SiO_2 layer (col. 3, lines 1-4 and 31-33). Note that Touchy disclose the dopant material (diffusion source) may be deposited by a spin-on process (col. 3, lines 31-33), meaning the diffusion source (Zn or Mg composition) is in the form of a layer. In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to modify the invention of Omi by doping the p-GaN layer using the method of Touchy, and therefore the intermediate structure of Touchy (comprising an SiO_2 layer over the p-GaN layer, and a diffusion source layer over the SiO_2 layer). Touchy also discloses the Group III elements (in this case Ga) and the group II metal elements diffuse through the protective layer (first SiO_2 layer) (col. 5, lines 16-29). Therefore, the first SiO_2 layer must be thick enough to create vacancies to a depth in said p-type layer that encourage atoms of said Group II metal to diffuse thereinto while still permitting diffusion from said Group II metal source composition. The limitation "when said device is heated to temperatures between about 750 and 950 degrees" is merely a product-by-process limitation that does not structurally distinguish the claimed invention over the prior art. The ordinary artisan would have been motivated to modify Edmond'262 in the manner described above for the purpose of selecting inexpensive and well-known process for implanting p-dopants (Mg) into the p-layer of Edmond'262. A further difference between Edmond'262 and

the claimed invention is a second silicon dioxide layer on said Group II metal source composition layer. Figure 5 of Ogihara discloses a SiO_2 cap layer 22 (col. 4, lines 3-5) over a diffusion source layer 20. In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to further modify the invention of Edmond'262 and Touchy by including a second SiO_2 layer over the diffusion source layer for the purpose of preventing escape of the diffusion impurity into the ambient space (col. 3, lines 37-41 of Ogihara).

Regarding claim 16, Edmond'262 discloses the buffer layer 34 is made of group III nitride material (col. 4, lines 26-29), which must be graded, homogeneous, heterogeneous, or combinations thereof.

Claims 7 and 15 rejected under 35 U.S.C. 103(a) as being unpatentable over Edmond'262 in view of Touchy and Ogihara as applied to claims 1 and 14 above, and further in view of Omi et al. (US Pat. 6,549,552, hereinafter Omi).

Regarding claims 7 and 15, Edmond'262 does not specifically disclose the SiC substrate 21 is n-type. Figure 1 of Omi discloses a light-emitting device with an n-type SiC substrate 1 (col. 4, lines 25-27). In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to modify the invention of Edmond by using an n-type SiC substrate for the purpose of increasing the conductivity of the substrate. Further regarding claim 7, Edmond'262 does not specifically disclose the substrate has a carrier concentration of between about 1×10^{16} cm^{-3} and about 1×10^{19} cm^{-3}. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the invention of

Edmond'262 by using a carrier concentration within the claimed range, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claims 47 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Edmond'262 in view of Touchy and Ogihara as applied to claim 46 above, and further in view of Nobori.

Regarding claim 47, a further difference between Edmond'262 and the claimed invention is a plurality of silicon dioxide portions on said p-type Group III nitride layer, with a respective portion of said source composition on each said silicon dioxide portion. Figures 1 and 2 of Nobori disclose an array of LED's (shown as hatched portions in Figure 1), wherein each LED has a diffusion area 15 and a diffusion source layer 12 over the diffused area. In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to further modify the invention of Edmond'262 in view of Touchy and Ogihara by having a plurality of separate diffusion areas, wherein each area is covered by a separate diffusion source layer. The ordinary artisan would have been motivated to modify Edmond'262 in the manner described above for the purpose of fabricating a plurality of LED's on the same substrate.

Regarding 49, it would also be obvious to have the second silicon dioxide layer (diffusion cap layer) covering said source composition portions and portions of the p-type Group III nitride layer as taught by Nobori (element 14 in Figure 2), for the purpose of simplifying the production process.

Allowable Subject Matter

Claim 12 is allowed.

Claim 48 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments filed January 22, 2008 have been fully considered but they are not persuasive.

Applicant argues regarding the rejection of Touchy in view of Ogihara that:

"Touchy states that its protective layer, which can be a silicon dioxide layer, allows Group III elements and dopant to diffuse through it. Accordingly, although Ogihara states that anneal cap 22 can be silicon dioxide, the skilled artisan would not modify the Touchy device to include a silicon dioxide "anneal cap" because the expectation would be that such an "anneal cap" would not function as such, that is, silicon dioxide would permit, not block, diffusion. Thus, the addition of a silicon dioxide "anneal cap" would actually be expected to decrease efficiencies by promoting loss of dopant from the device".

As stated previously, and apparently acknowledged by Applicant, Ogihara explicitly teaches that SiO_2 can be used as an anneal cap (formed over the diffusion source) (see col. 4, lines 3-11 of Ogihara). It appears that Applicant alleges that the information presented in Ogihara is incorrect; that the SiO_2 anneal cap layer taught by Ogihara cannot possible function in the manner described by Ogihara. However, Applicant has provided no evidence to support this

position. When the reference relied on expressly anticipates or makes obvious all of the elements of the claimed invention, the reference is presumed to be operable. Once such a reference is found, the burden is on applicant to provide facts rebutting the presumption of operability. Affidavits or declarations attacking the operability of a patent cited as a reference must rebut the presumption of operability by a preponderance of the evidence. *In re Sasse*, 629 F.2d 675, 207 USPQ 107 (CCPA 1980). Simply because Touchy discloses a silicon oxide layer that allows diffusion, does not mean that another, different silicon oxide layer (such as that disclosed by Ogihara) cannot function as an anneal cap layer as explicitly taught by Ogihara. If Applicant wishes to continue this line of argument, they must present clear and convincing evidence, in the form of an affidavit or declaration, that SiO_2 anneal cap layer disclosed by Ogihara absolutely cannot function in the manner specifically taught by Ogihara.

Applicant argues regarding the combination of Touchy, Ogihara, and Edmonds that:

"For example, Edmond addresses the problem of crystal lattice matching. In contrast, crystal lattice mismatch is not a problem for the Touchy device because the Group III-V substrate is itself doped. Accordingly, there is no motivation to combine the teachings of the Touchy and Edmonds patents."

Simply because the two patents solve different problems does not mean they cannot be combined. The references are sufficiently analogous because they are from the same field of endeavor (electroluminescent semiconductor devices). The above rejection provided the motivation to combine the references.

Applicant further argues that:

"The Touchy method directly dopes a single crystal Group III-V substrate. At best, one would substitute the SiC single crystal substrate of Edmond for the Group III-V single crystal substrate of Touchy. Yet such a device would differ significantly in function and structure from the claimed invention."

At no point did the above rejection suggest substituting the substrate of Edmond for the GaN layer of Touchy; therefore Applicants argument is not persuasive.

Applicant argues regarding the rejection of claims 11 and 13 that:

"With regard to Claims 11 and 13, the Touchy patent does not teach or suggest a device including a plurality of silicon dioxide portions on a p-type Group III nitride layer, with a respective portion of a source composition on each silicon dioxide portion. Touchy also teaches away from this embodiment of the invention, requiring application of a protective silicon dioxide layer over the entire surface of the substrate to be treated. Column 3, lines 10- 11. This is consistent with the overall process of Touchy, in which the entire surface of the substrate is exposed to a gaseous form of the dopant or to a "paint-on" or "spin-on" coating of dopant. There is simply no motivation to modify Touchy, alone or in combination with Nobori, to provide a device having a plurality of silicon dioxide portions with a respective portion of a source composition on each silicon dioxide portion, and to argue otherwise ignores or frustrates the functionality of the Touchy process."

As explained above, the point of the rejection was to modify Touchy by having a plurality of separate diffusion areas, wherein each area is covered by a separate diffusion source layer, thereby making it possible to have a plurality of LEDs on the same substrate. After this modification, there would no longer be any need to have a silicon dioxide over the entire surface. Applicant is arguing against Touchy individually rather than the specific combination presented by the examiner. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicant's arguments regarding Omi are moot in light of the new grounds of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew C. Landau whose telephone number is 571-272-1731. The examiner can normally be reached on 9:00AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ken Parker can be reached on 571-272-2298. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Matthew C. Landau/
Primary Examiner, Art Unit 2815